(19) World Intellectual Property Organization

International Bureau





(43) International Publication Date 11 November 2004 (11.11.2004)

(10) International Publication Number WO 2004/096366 A1

- (51) International Patent Classification7: A61P 9/00, A61K 31/5386, 31/547, C07D 513/08, 498/08
- (21) International Application Number:

PCT/EP2004/004371

- (22) International Filing Date: 26 April 2004 (26.04.2004)
- (25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

PCT/EP03/04492

30 April 2003 (30.04.2003)

- (71) Applicant (for all designated States except US): ACTE-LION PHARMACEUTICALS LTD [CH/CH]; Gewerbestrasse 16, CH-4123 Allschwil (CH).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): BEZENCON, Oliver [CH/CH]; Dürrenmattweg 53, CH-4123 Allschwil (CH). BUR, Daniel [CH/CH]; Im Rosengarten 24, CH-4106 Therwill (CH). FISCHLI, Walter [CH/CH]; Obertorweg 64, CH-4123 Allschwil (CH). REMEN, Lubos [CH/CH]; Kurzelängeweg 28, CH-4123 Allschwil (CH). RICHARD-BILDSTEIN, Sylvia [FR/FR]; 12, rue des Beaux Prés, F-68440 Dietwiller (FR). WELLER, Thomas [CH/CH]; Hoelzlistrasse 32b, CH-4102 Binningen (CH). SIFFERLEN, Thierry [FR/FR]; 6, rue de Thann, F-68116 Guewenheim (FR).

- (74) Agent: HOFMANN, Dieter; Therwilerstrasse 87, CH-4153 Reinach (CH).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: 9-AZABICYCLO'3.3.1!NON-6-EE DERIVATIVES WITH A HETEROATOM AT THE 3-POSITION AS RENIN IN-

(57) Abstract: The invention relates to novel 9-azabicyclo[3.3.1]nonene derivatives and related compounds and their use as active ingredients in the preparation of pharmaceutical compositions. The invention also concerns related aspects including processes for the preparation of the compounds, pharmaceutical compositions containing one or more of those compounds and especially their use as inhibitors of renin.



INTERNATIONAL SEARCH REPORT

n nat Application No PCT/EP2004/004371

A. CLASSIFICATION OF SUBJECT MATTER IPC 7 A61P9/00 A61K Ä61K31/5386 A61K31/547 C07D513/08 C07D498/08 According to International Patent Classification (IPC) or to both national classification and IPC **B. FIELDS SEARCHED** Minimum documentation searched (classification system followed by classification symbols) CO7D IPC 7 Documentation searched other than minimum documentation to the extent that such documents are included. In the fields searched Electronic data base consulted during the International search (name of data base and, where practical, search terms used) EPO-Internal, CHEM ABS Data, WPI Data, BEILSTEIN Data C. DOCUMENTS CONSIDERED TO BE RELEVANT Citation of document, with indication, where appropriate, of the relevant passages Relevant to claim No. Category 9 WO 97/09311 A (HOFFMANN LA ROCHE) Α 1 - 1013 March 1997 (1997-03-13) claims 1-25 US 3 509 161 A (DOLD OTTO ET AL) 1 - 10Α 28 April 1970 (1970-04-28) column 8, lines 1-65 CHEN, ZHENGMING ET AL: "Synthesis and · 1-10 Α Dopamine Transporter Affinity of 2-(Methoxycarbonyl)-9-methyl-3-phenyl-9-az abicyclo'3.3.1!nonane Derivatives" JOURNAL OF MEDICINAL CHEMISTRY, 39(24) 4744-4749 CODEN: JMCMAR; ISSN: 0022-2623, 1996, XP002291893 the whole document -/--Further documents are listed in the continuation of box C. X Patent family members are listed in annex. Special categories of cited documents: "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the *A* document defining the general state of the art which is not considered to be of particular relevance Invention "E" earlier document but published on or after the International "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to filing date document which may throw doubts on priority claim(s) or which is clied to establish the publication date of another citation or other special reason (as specified) involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled O' document referring to an oral disclosure, use, exhibition or other means document published prior to the international filing date but later than the priority date claimed "&" document member of the same patent family Date of the actual completion of the international search Date of mailing of the international search report 13 September 2004 01/10/2004 Name and mailing address of the ISA Authorized officer European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016 Schuemacher, A

INTERNATIONAL SEARCH REPORT

Int al Application No PCT/EP2004/004371

	ntion) DOCUMENTS CONSIDERED TO BE RELEVANT	Delevent to state Ma		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.		
P,Y	WO 03/093267 A1 (ACTELION PHARMACEUTICALS LTD., SWITZ.) 13 November 2003 (2003-11-13) claims 1-12	1-10		
P,Y	WO 2004/002957 A (REMEN LUBOS; WELLER THOMAS (CH); BUR DANIEL (CH); FISCHLI WALTER (CH)) 8 January 2004 (2004-01-08) claims 1-10			
;	·			
	,			

Form PCT/ISA/210 (continuation of second sheet) (January 2004)

tional application No. PCT/EP2004/004371

INTERNATIONAL SEARCH REPORT

Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)								
This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:								
1. X Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely:								
Although claims 8-10 are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.								
Claims Nos.: because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:								
3. Claims Nos.:								
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).								
Box III Observations where unity of invention is lacking (Continuation of Item 3 of first sheet)								
This International Searching Authority found multiple Inventions in this international application, as follows:								
As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.								
2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.								
3. As only some of the required additional search fees were timely paid by the applicant, this international Search Report covers only those claims for which fees were paid, specifically claims Nos.:								
4. No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:								
Remark on Protest The additional search fees were accompanied by the applicant's protest. No protest accompanied the payment of additional search fees.								

INTERNATIONAL SEARCH REPORT

rmation on patent family members

Inte al Application No PC1/EP2004/004371

	tent document In search report		Publication date		Patent family member(s)		Publication date
WO	9709311	A	13-03-1997	AT	242213	T	15-06-2003
				AU	708616	B2	05-08-1999
				ΑÙ	6743296	Α .	27-03-1997
				BR	9610385	Α	06-07-1999
				CA		A1	13-03-1997
				CN		A	16-12-1998
				CZ	9800684	A3	14-10-1998
				DE	59610509	D1	10-07-2003
				DK	863875	T3	01-12-2003
				WO	9709311	A1	13-03-1997
				EP Ès	0863875 2201192	A1 T3	16-09-1998 16-03-2004
				HU	9900926	A2	28-09-1999
				IL	123293	A	24-06-2003
				ĴΡ	11500447	Ť	12-01-1999
				MA	23967	À1	01-04-1997
				NO	980954	A	28-04-1998
				NZ	315677	A	28-02-2000
				PL	325425	A1	20-07-1998
				PT	863875	T	31-10-2003
	•			RU	2167865		27-05-2001
				TR	9800409	T1	21-05-1998
				TW	474932		01-02-2002
				บร	6051712		18-04-2000
				US	6150526		21-11-2000
				ZA 	9607424	A 	07-03-1997
US	3509161	Α	28-04-1970	NONE			
WO	03093267	A1	13-11-2003	NONE			
WO	2004002957	 А	08-01-2004	WO	2004002957	A1	08-01-2004